

WHAT IS CLAIMED IS:

1. A light-emitting device comprising:

a pair of electrodes formed on a substrate; and

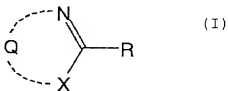
organic compound layers comprising a light-emitting layer  
provided in between the electrodes,

wherein at least one of the organic compound layers  
comprises a heterocyclic compound having at least two hetero  
atoms and a phosphorescent compound.

2. The light-emitting device according to claim 1, wherein  
the phosphorescent compound is an organic metal complex.

3. The light-emitting device according to claim 2, wherein  
the organic metal complex is an ortho-metalated metal complex.

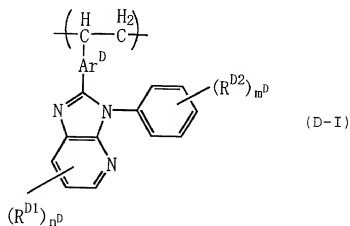
4. The light-emitting device according to claim 1, wherein  
the heterocyclic compound is represented by formula (I):



wherein R represents a hydrogen atom or a substituent; X  
represents -O-, -S-, =N- or =N-R<sup>3</sup>; R<sup>3</sup> represents a hydrogen  
atom, an aliphatic hydrocarbon group, an aryl group or a

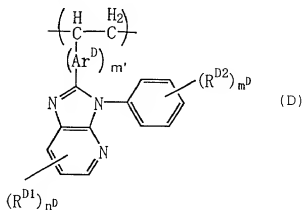
heterocyclic group; and Q represents an atomic group necessary for forming a hetero ring together with N and X.

5. A polymer comprising a repeating unit represented by formula (D-I):



wherein  $Ar^D$  represents an arylene group or a divalent heterocyclic group;  $R^{D1}$  and  $R^{D2}$  each independently represent a hydrogen atom or a substituent;  $n^D$  represents an integer of 0 to 3; and  $m^D$  represents an integer of 0 to 5.

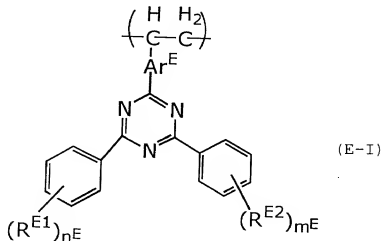
6. The light-emitting device according to claim 1, wherein the heterocyclic compound is a polymer comprising a repeating unit represented by formula (D):



wherein  $\text{Ar}^D$  represents an arylene group or a divalent heterocyclic group;  $\text{R}^{D1}$  and  $\text{R}^{D2}$  each independently represent a hydrogen atom or a substituent;  $n^D$  represents an integer of 0 to 3;  $m^D$  represents an integer of 0 to 5; and  $m'$  represents 0 or 1.

7. The light-emitting device according to claim 6, wherein the substituent is a group selected from the group consisting of an alkyl group, an alkenyl group, an alkynyl group, an aryl group, an alkoxy group, an aryloxy group, an acyl group, a halogen atom, a cyano group, a heterocyclic group, and a silyl group.

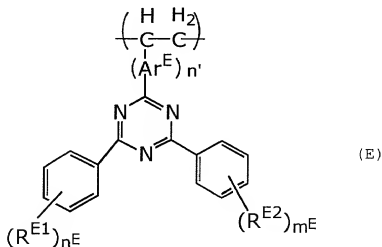
8. A polymer comprising a repeating unit represented by formula (E-I):



wherein  $\text{Ar}^E$  represents an arylene group or a divalent heterocyclic group;  $\text{R}^{E1}$  and  $\text{R}^{E2}$  each independently represent a hydrogen atom

or a substituent;  $n^E$  and  $m^E$  each independently represent an integer of 0 to 5; and  $n'$  represents 0 or 1.

9. The light-emitting device according to claim 1, wherein  
5 the heterocyclic compound is a polymer comprising a repeating unit represented by formula (E):



- 15 wherein  $Ar^E$  represents an arylene group or a divalent heterocyclic group;  $R^{E1}$  and  $R^{E2}$  each independently represent a hydrogen atom or a substituent;  $n^E$  and  $m^E$  each independently represent an integer of 0 to 5; and  $n'$  represents 0 or 1.

- 20 10. The light-emitting device according to claim 9,  
wherein the substituent is a group selected from the group  
consisting of an alkyl group, an alkenyl group, an alkynyl  
group, an aryl group, an alkoxy group, an aryloxy group, an  
acyl group, a halogen atom, a cyano group, a heterocyclic group,  
25 and a silyl group.

11. The light-emitting device according to claim 3,  
wherein the ortho-metalated metal complex is an iridium complex.

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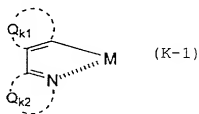
12. The light-emitting device according to claim 1,  
wherein the organic compound layers comprise a polymer.

13. The light-emitting device according to claim 1,  
10 wherein the phosphorescent compound has a phosphorescence  
quantum yield at room temperature of at least 25%.

14. The light-emitting device according to claim 3,  
wherein the ortho-metalated metal complex contains 5 to 100  
15 carbon atoms.

15. The light-emitting device according to claim 3,  
wherein the ortho-metalated metal complex is a compound having  
a partial structure represented by formula (K-1):

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wherein M represents a transition metal;  $Q_{k1}$  represents an atomic  
25 group necessary for forming a 5- or 6-membered aromatic ring;

and  $Q_{k2}$  represents an atomic group necessary for forming a 5-  
or 6-membered aromatic azole ring;  
or tautomer of the compound.

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